

Reported Fire Losses In The Petroleum Industry For 1980

Statistics Department

DECEMBER 1981

**American
Petroleum
Institute**



REPORTED FIRE LOSSES IN THE PETROLEUM INDUSTRY—1980

The experience record of 27 companies reporting to the 51st annual fire loss survey to the American Petroleum Institute indicates a ratio of fire losses to current replacement value in 1980 of 162.2 cents per \$100. A current replacement value of \$130,346,391,018 was reported for structures, equipment, contents and oil stocks in 1980.

Fire losses of \$2,113,847,508 were reported for the year. The number of fires reported for 1980 totaled 366.

TABLE 1
CURRENT REPLACEMENT VALUES,
FIRE LOSSES, AND FIRE-LOSS RATIOS,
BY CLASSES OF PROPERTY FOR 1980

Classes of Property	Current Replacement Value \$	Fire Loss \$	Fire-Loss Ratio \$/ \$100
Exploration, Production & Gas Processing	64,074,144,284	214,693,784	0.335
Refining	28,570,892,480	1,190,797,592	4.168
Marketing	11,258,471,422	51,458,996	0.457
Pipeline	12,763,036,612	24,686,720	0.193
Chemical Operations	9,699,275,459	631,307,000	6.509
Miscellaneous	3,980,570,761	903,416	0.023
All properties	130,346,391,018	2,113,847,508	1.622

NOTES: The reporting of fires for 1980 was restricted to those resulting in losses of \$2,500 or more.

A list of the companies participating in the survey for 1980 appears on page 5.

TABLE 2
NUMBER OF FIRES REPORTED FOR 1980

Class of Property	Year	Originating on Oil-Company Properties		Originated Outside But Spread to Oil-Company Property	No. \$2,500 to \$100,000 Loss	No. \$100,000 to \$1,000,000 Loss	No. over \$1,000,000 Loss	Total Number of Fires
		Confined to Property	Spread to Other Property					
Exploration, Production & Gas Processing	1980	94	0	2	84	11	1	96
Refining	1980	140	0	0	92	37	11	140
Marketing	1980	69	3	0	67	4	1	72
Pipeline	1980	9	0	0	5	4	0	9
Chemical Operations	1980	17	0	0	10	5	2	17
Miscellaneous	1980	32	0	0	28	4	0	32
All Properties	1980	361	3	2	286	65	15	366

NOTE: The reporting of fires for 1980 was restricted to those resulting in losses of \$2,500 or more. This report is not comparable to 1979.

TABLE 2
NUMBER OF PROPERTIES AND FIRES REPORTED FOR 1979

		Number of Fires Reported									
Class of Property	Year	Total Number of Properties Reported To Have Been Owned or Operated	Originating on Oil-Company Properties		Originated Outside But Spread to Oil- Company Property	No. \$1,000 to 10,000 Loss	No. \$10,000 to 100,000 Loss	No. \$100,000 to 500,000 Loss	No. over \$500,000 Loss	Total Number of Fires	Frequency
			Confined to Property	Spread to Other Property							Fires Per 100 Properties
Oil leases (offshore)	1979	1,377	16	0	0	6	9	0	1	16	1.162
Oil leases (inland)	1979	92,582	116	4	4	79	42	3	0	124	0.134
Tank farms	1979	341	3	0	0	1	2	0	0	3	0.880
Pipeline stations	1979	1,624	7	1	0	1	1	4	2	8	0.493
Natural-gasoline plants	1979	560	33	0	0	11	15	6	1	33	5.893
Refineries	1979	166	205	0	0	69	69	44	23	205	123.494
Bulk terminals (shore)	1979	486	6	0	0	2	0	2	2	6	1.235
Bulk plants (inland)	1979	4,924	8	1	0	6	3	0	0	9	0.183
Service stations	1979	48,801	35	2	2	22	17	0	0	39	0.080
Tank trucks	1979	9,710	2	2	0	1	3	0	0	4	0.041
Tankers and barges	1979	245	1	1	0	0	1	0	1	2	0.816
Unclassified properties	1979	18,241	35	0	0	24	10	1	0	35	0.192
All properties	1979	179,057	467	11	6	222	172	60	30	484	0.270

NOTE: The reporting of fires for 1979 was restricted to those resulting in losses of \$1,000 or more.
Not comparable to 1980.

TANK FIRE EXPERIENCE IN 1980

Eleven companies responded to a questionnaire requesting information on fires originating in tanks, resulting in losses of \$1,000 or more per fire. Reports on such fires in 1980 are summarized in Table 3. A total of 36 fires in this category were reported for 1980 compared with 37 for 1979. These fires involved 46 tanks in 1980, the same as 1979 when 46 tanks were involved.

Of the tanks affected in 1980, 26 stored crude oil compared with 21 in 1979.

By type of tank involved in fires, 23 had cone roofs in 1980 compared with 31 in 1979. 4 were of the dome roof type in 1980 compared with 5 in 1979.

Of a total of 46 tanks involved in 1980, 30 were located on producing properties, 11 at refineries, none in pipeline operations and 3 at bulk plants and terminals. In 1979 the 46 tanks involved were located as follows: 24 at producing properties, 17 at refineries, 1 in pipeline operations and 2 at bulk plants and terminals.

TABLE 3
TANK FIRE EXPERIENCE IN 1980
COMPARED WITH 1979

Fires Originating in Tanks Resulting in Losses of \$1,000 or More

	Number of Tanks Involved in Fires																			
	Structural Type of Tank																			
	Floating Roof																			
	Pantograph Seal		Tube Seal		Covered		Total		Cone Roof		Dome Roof		Sphere & Spheroid		Horizontal		Other Types		Total	
	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979
By Class of Product:																				
Crude Oil	0	2	0	0	0	0	0	2	13	16	2	3	0	0	6	0	5	0	26	21
Products:																				
Under 100 F Flash	3	4	2	0	1	1	6	5	1	1	1	2	0	0	0	0	0	0	8	8
100-200 F Flash	0	2	0	0	0	0	0	2	4	0	0	0	0	0	1	0	0	0	5	2
Over 200 F Flash	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	3	4
LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	1	0	0	0	1	2	10	1	0	0	0	0	0	1	0	4	11
Total	3	8	2	1	1	1	6	10	23	31	4	5	0	0	7	0	6	0	46	46
By Location:																				
Producing Properties	0	0	0	0	0	0	0	0	15	19	3	5	0	0	6	0	6	0	30	24
Pipeline Operations	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Refineries	0	5	2	1	0	0	2	6	8	11	1	0	0	0	0	0	0	0	11	17
Bulk Plants & Terminals	3	1	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	3	2
Other Locations	0	1	0	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	2	2
Total	3	8	2	1	1	1	6	10	23	31	4	5	0	0	7	0	6	0	46	46
Total Number of Fires Involving Tanks (regardless of number of tanks involved)																			36	37

COMPANIES PARTICIPATING IN THE 1980 SURVEY

Ashland Oil, Inc.
Atlantic Richfield Company
Colonial Pipeline Company
Conoco, Inc.
Dorchester Gas Corporation
Exxon Company, U.S.A.
Getty Oil Company
Kentucky Hydrocarbon Company
Lakeside Refining Company
MacDonnell Company of Lima, Inc., The
Mobil Oil Corporation
Monsanto Company
National Helium Corporation
Phillips Petroleum Company

Plantation Pipe Line Company
Portland Pipe Line Corporation
Standard Oil Company (Indiana)
Standard Oil Company (Ohio)
Standard Oil Company of California
Sun Company, Inc.
Tenneco Oil Company
Tesoro Petroleum Corporation
Texas Eastern Transmission Corporation
Thompson, J. Cleo
Tosco Corporation
Union Oil Company of California
United Refining Co.